

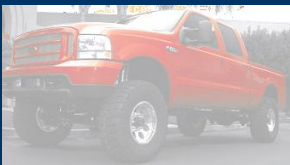
Ultra Low Sulfur Diesel

Maine Motor Transport Association Seminar

July 13, 2006

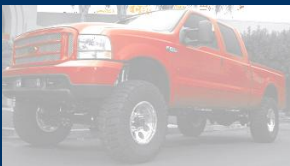
Alfonse Mannato

API



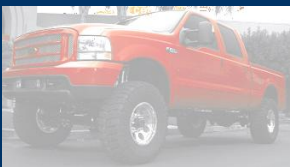
Importance of diesel

- Gallons consumed annually: 46 billion
- Transports:
 - 70% of nation's goods
 - \$5.9 trillion worth of goods annually
 - 18 million tons of freight daily
 - 14 million people daily



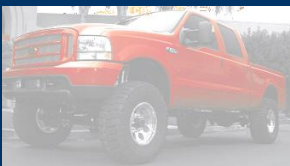
ULSD -- Overview

- Beginning June 1, 2006 a minimum 80% of the highway diesel produced by refiners must be ULSD – 15 ppm sulfur. EPA says >90% actually will be
- Refiners have invested over \$8 billion to comply with the ULSD requirements and there have also been significant investments downstream
- EPA actions have reduced the probability of contamination at the outset of the program
- This program will provide annual emission reductions equivalent to removing the pollution from more than 90 percent of today's trucks and buses once it is fully implemented



Communications/Outreach

- Many public and private organizations are collaborating through the Clean Diesel Fuel Alliance to facilitate the introduction of ULSD fuel
- This organization will attempt to provide comprehensive information and technical coordination
- Members of the Clean Diesel Fuel Alliance include:
 - U.S. Department of Energy
 - U.S. Environmental Protection Agency
 - Engine, vehicle and component manufacturers
 - All sectors of the petroleum industry
 - Fuel consumers, such as truckers and AAA
- For a complete list of participating organizations and contacts for detailed technical and implementation information regarding ULSD fuel, visit www.clean-diesel.org



Highway and Non-road Diesel Timelines

	2006	2007	2008	2009	2010	2011	2012	2013	2014
Highway	15 ppm (80%)*				15 ppm (100%)				
Part 89 Non-road Diesel (NR) (Farm/Construction)		500 ppm			15 ppm				
Locomotive and Marine (L&M)		500 ppm					15 ppm		
With Credits NR (not in NE or AK)		5000 ppm			500 ppm				15 ppm
Small Refiner Non-road Diesel (not in NE; with approval in AK)		5000 ppm			500 ppm				15 ppm
Transmix/In-Use NR (not in NE or AK)		5000 ppm			500 ppm				15 ppm
Transmix/In-use L&M (not in NE or AK)		5000 ppm			500 ppm				

* 2006: Refinery – June 1; Terminal – September 1; Retail – October 15

ULSD Highway Implementation

- 80% of highway diesel is ULSD

Compliance dates:

Refiners

6/1/06

Terminals

9/1/06

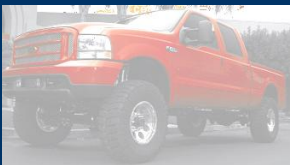
Retail

10/15/06

- 22ppm allowed for sale as ULSD

June 1 – Oct. 15, 2006

- Allows time to flush pipelines, tanks, etc.
- Identify unforeseen operational issues



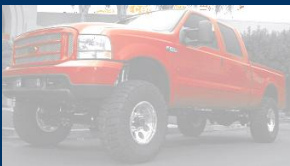
Refinery Investment for Sulfur Reductions

- \$8 billion for gasoline sulfur reductions
- \$8 billion for highway diesel sulfur reductions
- \$1 billion + for non-road diesel sulfur reductions



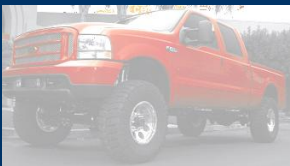
EPA Estimated Benefits

- Highway & non-road vehicles:
 - Cut harmful pollution by 90%
 - 3.3 million tons of smog-causing nitrogen oxide emissions
 - 250,000 tons of particulate matter



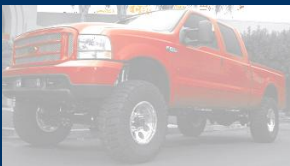
Pipeline Products Transported

- Multiple products with wide variances in sulfur levels are moved via pipeline
 - Heating Oil – up to 5000ppm
 - HSD – up to 5000ppm
 - Jet Fuel – up to 3000ppm
 - LSD – up to 500ppm
 - ULSD – up to 15ppm
 - Gasoline – up to 80ppm
- Keeping additional sulfur away from ULSD is a significant challenge

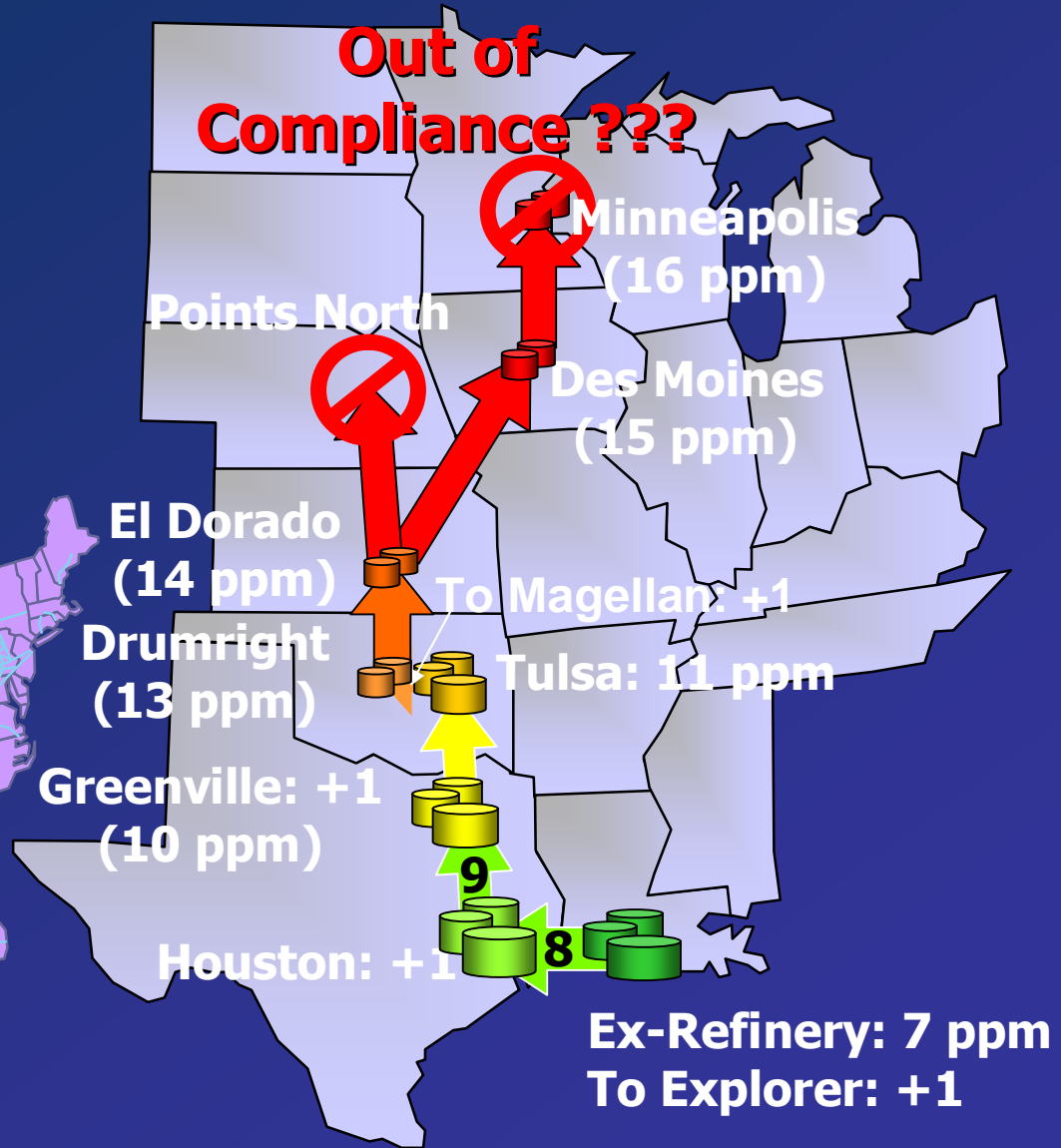
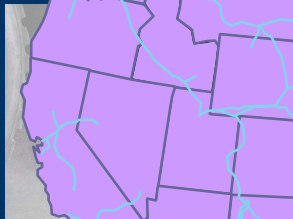


Contamination Concerns

- Common modes of transport
 - Pipelines, barges, railcars, trucks
- Common terminal lines
- CPL announces 8ppm max in May 05
- Others have announced same spec



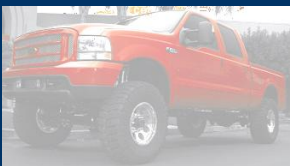
Scenario: GC to Midwest



EPA Flexibility Measures*

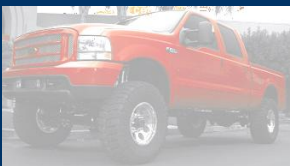
- In response to the concerns raised by industry, EPA has
 1. issued a direct final rule that includes several actions:
 - The terminal and retail compliance date have been shifted 45 days later
 - Terminal – From July 15 to September 1
 - Retail – From September 1 to October 15
 - During this extended period, 22 ppm diesel fuel can be marketed as ULSD downstream
 2. EPA has looked at how the fuel is tested and has announced that the testing tolerance will be increased from 2 ppm sulfur to 3 ppm from June 1, 2006 until October 14, 2008
- These EPA actions have reduced the probability of contamination at the outset of the program

* Flexibility measures do not apply to California ULSD



ULSD -- Implementation

- Historically, the introduction of a new on-highway fuel has resulted in some temporary, localized supply imbalances
- The results of the test ULSD movements by Marathon Petroleum, Colonial Pipeline, and others had indicate that there was a high probability of contamination at the outset of the program
- Refiners are producing diesel at sulfur levels of 5 to 12 ppm (approximately half were designed with a sulfur release specification of 10 ppm or higher and thus could experience a slight loss of production capability)
- During the early stages of the phase-in, a relatively small number of 2007 model year and later vehicles requiring ULSD will be on the road so a large quantity of ULSD can be downgraded without harm, though EPA regulations limit the amount of highway diesel that can be downgraded to 20%
- However, localized areas farthest from the refining centers, where the fuel must pass through multiple distribution points and hand-offs are of greatest risk of not having ULSD consistently available



Refiners & Importers

- 80% on-highway production / imports as of 6/1/06

- Compliance periods:

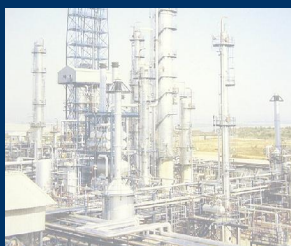
- 2006: 6/1/06 – 6/30/07

- 2007-2009: 7/1 – 6/30

- 2010: 7/1/09 – 5/31/10

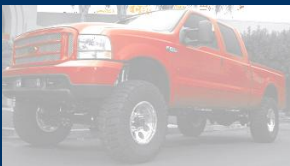
- Not required by regs to be below 15ppm, but pipelines are requiring 7 or 8ppm

- 100% on-highway production as of 6/1/10



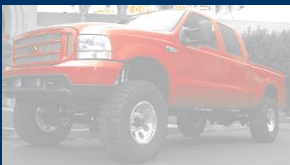
Downstream from Refinery (Pipelines & Terminals)

- ULSD at 22ppm from 6/1 to 9/1
- Add lubricity and conductivity additives
- Anti-downgrade provisions start 10/15
 - No more than 20% of ULSD can be downgraded to low sulfur highway
 - Unlimited re-designation from on highway to non-road / heating oil pool
 - Highway tax rebate available



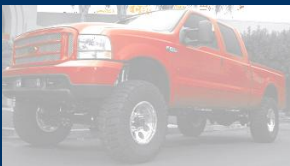
Retailers / Wholesale Purchaser-Consumers

- Label all pumps by 6/1/06
- ULSD at 22ppm from 6/1 to 10/15
- Not Required to sell ULSD
- Anti-downgrade provisions start 10/15
 - Downgrade Scenarios:
 - Station A: Selling ULSD only – downgrade NA
 - Station B: Selling LSD only – 20% max
 - Station C: Selling both USLD and LSD – Unlimited
 - Station A can't get ULSD and switches to LSD:
 - Station A becomes Station B: subject to 20% max



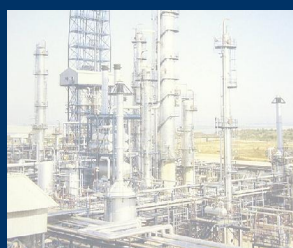
Retailers / Wholesale Purchaser-Consumers

- Not required to:
 - Sell ULSD
 - Sample each delivery
- May elect to joint testing consortium (RFGSA)
 - Randomly sample member stations
 - Reports to EPA



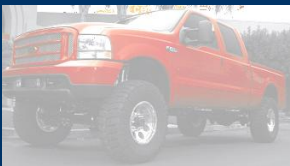
Anti-Downgrading Provisions

- Begin on 10/15 for all facilities
- Each facility can downgrade up to 20% ULSD to LSD on annual basis
- No limit on re-designation: ULSD to NRLM
- In theory 100mb out of the refinery...
 - 80mb out of the pipeline
 - 64mb out of the terminal
 - 51mb at retail or less



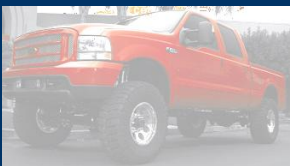
Penalties

- Up to \$32,500 per day per occurrence
- Economic Benefit
- Presumptive liability
 - Parties that own, lease or operate facility
 - Refiner's brand name that appears at facility
 - Not common carriers, unless found at their facility
 - Does apply to truck carriers
- Affirmative Defenses:
 - QA / QC Program
 - RFGSA Program



Will ULSD Be Sold at Every Retail Diesel Location?

- Between 2006 and 2010, both ULSD fuel and Low Sulfur Diesel fuel will be available
- Although ULSD fuel will be the dominant highway diesel fuel produced, the EPA does not require service stations and truck stops to sell ULSD fuel
- Some retail outlets will sell ULSD fuel, others Low Sulfur Diesel fuel, and some will sell both
- Therefore, it is possible that ULSD fuel might not be available initially at every service station or truck stop and that a diesel retailer may choose to sell Low Sulfur Diesel fuel instead of ULSD fuel
- The industries involved in the transition are doing all they can to minimize potential inconveniences during the conversion to the new diesel fuel



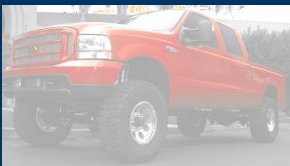
Labeling

■ Pump Labeling

- Beginning June 1, 2006 Federal regulations require the labeling of all diesel fuel pumps to specify the type of fuel – ULSD fuel or Low Sulfur Diesel fuel -- dispensed by each pump
- Similar instrument panel and fuel inlet/fill cap labeling is being mandated for 2007 and later model year engines and vehicles that require ULSD fuel
- Consumers are advised to check the pump and vehicle labels to ensure they are refueling with the proper diesel fuel consistent with their vehicle warranties

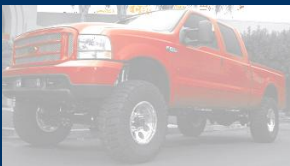
■ Truck/Rack/UST Spill Bucket Cover Labels

- API will issue an update to Recommended Practice 1637



Biodiesel

- Most engine and vehicle manufacturers allow biodiesel blends in concentrations up to five percent provided those blends meet accepted (ASTM) fuel quality standards
 - Biodiesel blends are mixtures of petroleum-based diesel fuels and fuels produced from soybean oil, waste cooking grease, or other organic matter
 - These fuels may contain biodiesel in concentrations ranging from two percent to levels approaching 100 percent by volume
- To ensure proper quality, consumers should use only biodiesel-ULSD fuel blends that are properly mixed by a qualified biodiesel blender
- Consumers should not create their own biodiesel blends by adding biodiesel to ULSD fuel in a vehicle's fuel tank
- There is no operational problem if consumers switch from a biodiesel-ULSD fuel blend to ULSD fuel without biodiesel



Fuel Cost/Price

- ULSD costs more to manufacture and distribute than low sulfur fuel. Refiners have invested over \$8 billion to comply with the ULSD requirements and there have also been significant investments downstream
- No one can predict with certainty the price of ULSD fuel at the pump
- Many factors affect the consumer price of fuels, including
 - Crude oil price on the global market
 - Geopolitical events
 - Weather
 - Transportation
 - Economic events
 - Supply and demand
- For more information on fuel prices, visit the Energy Information Administration Web site at <http://tonto.eia.doe.gov/oog/info/gdu/gasdiesel.asp>

